# EN/EE 101–Introduction to the Exchange Network and E-Enterprise for the Environment

Chris Simmers, *New Hampshire DoIT*

Rob Willis, *Ross Strategic*

## 2015 Exchange Network National Meeting
### Supporting the Business of Environmental Protection

September 29–October 1, 2015
Sheraton Philadelphia Society Hill Hotel
Philadelphia, Pennsylvania

http://www.exchangenetwork.net/en2015

# ABSTRACT

The purpose of this session is to provide attendees with a basic understanding of the objectives of both the Exchange Network and E-Enterprise and how the two are an example of how the whole can be greater than the sum of its parts.
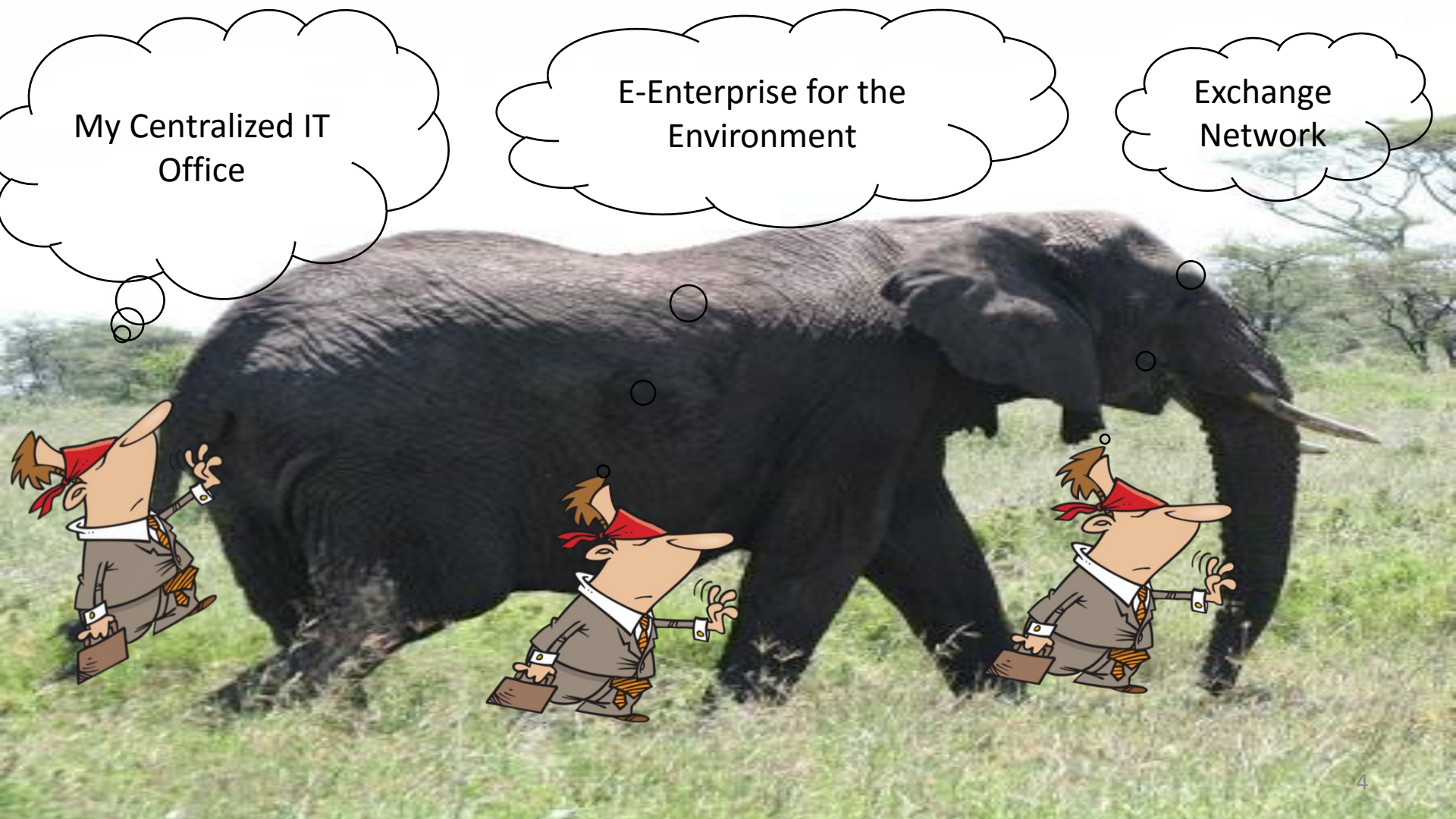
# Who is in the Room?

- Is this your first rodeo? Second? Veteran, and you just wanted to heckle us?
- Would you consider yourself an IT geek, a program nerd, a policy wonk, something else?
- How many have participated in a Lean/process improvement effort? Executed a flow over the Network?  Here to learn how?
- How many of you know what an API is?  Are working with them back home?

Report to the State/EPA Information...
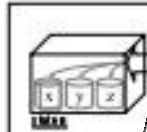
**Blueprint for a National
Information Exchange...**

Prepared by the Network Blueprint Team
October 30, 2000

...pleting Phase I of...

Media:
Flows
...Turn-Off Date:

| State | | |
|---|---|---|
| CT | | |
| MA | Flow | |
| ME | Flow | |
| NH | Flow | |
| RI | Flow | |
| VT | Flow | |
| NJ | Flow | |
| NY | Flow | |
| DE | Flow | |
| MD | Flow | |
| PA | Flow | |
| VA | Flow | |
| WV | Flow | Un... |
| DC* | Flow | Not i... |
| AL | Q1 2011 | Q3 20... |
| FL | | |
| GA | Flow | Flow |
| KY | Flow | Planned |
| MS | Flow | Discontinued |
| NC | Flow | Direct |
| | Flow | Not in Plan |
| | Flow | Q1 2011 |

**States** | Territories | Tribes | Others

Network Planni...
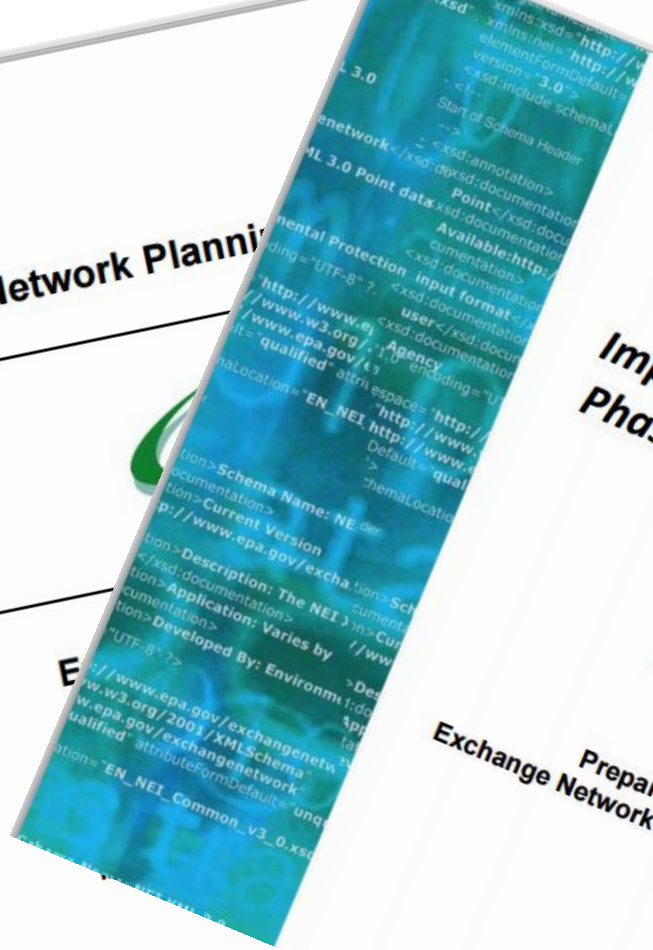
**Implementation Plan for
Phase 2 of the Exchange
Network**

Version: 1.0
June 10, 2013

Prepared by the
Exchange Network Leadership Council

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# Necessity is the Mother-in-Law of Opportunity

- You have the opportunity to help shape the future
- You have the opportunity to help 'refresh' our technology and look at next generation tools
- Exchange Network is transforming to a broader collaboration of how technology supports business
  - We are moving beyond the focus on flows
    - SDWIS and ICIS
  - Getting the information back from EPA, sharing it with the public, making it more useful in decision-making

# What is the Exchange Network?



**GRANT PROGRAM**

**SHARED SERVICES, SOFTWARE, AND TOOLS**

**JOINT GOVERNANCE & COMMUNITY**

**STANDARDS & PROTOCOLS**

The Exchange Network is a proven communication, data and services platform for sharing environmental information to foster informed decision-making, managed under the collaborative leadership of states, tribes, territories and U.S. EPA.

The Exchange Network is *the* place where States, Tribes, and EPA collaborate on technological innovations, solutions, and services.

- Since 2002, EPA has awarded approximately $200 million in assistance agreements to build the Environmental Information Exchange Network.
- All 50 states, five territories and 87 federally recognized tribes have received grants to facilitate the development and implementation of the EIEN.
- Each fiscal year, EPA expects to award about $10 million to approximately 40 to 50 EIEN projects; awards for each project can be up to $500,000.
- The FY 2016 Exchange Network (EN) Grant Program Solicitation Notice is now available to interested applicants.   FY 2016 Exchange Network Grant Solicitation Notice

- Standardized set of technologies, e.g., XML.
- Set of protocols that establish and standardize a secure mechanism for machine-to-machine exchange.
- Design guidance for developers of data services.
- Design guidance for individuals needing to develop XML Schema.
- Data Standards to support integration of information.

GRANT
PROGRAM

SHARED SERVICES,
SOFTWARE, AND TOOLS

JOINT
GOVERNANCE

STANDARDS
& PROTOCOLS
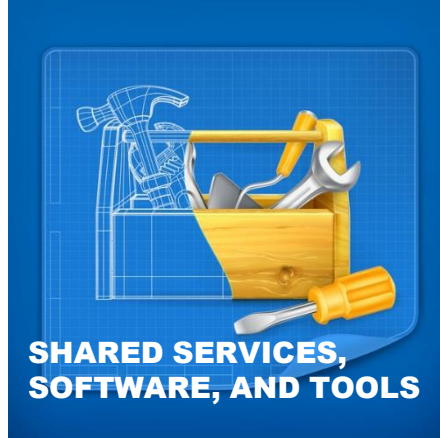
- Nodes and Plug-Ins
- Shared Services
- Security Services
- Virtual Exchange Services
- Exchange Network Browser
- Discovery Services
- Enterprise Identity Management
- Exchange Network Website
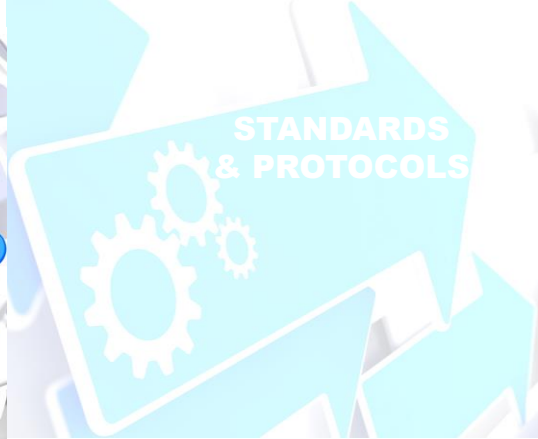
- Integrated Project Teams
- Exchange Network Leadership Council
- Network Technology Board
- Open Calls
- Network Alerts
- Exchange Network Website
- EN2015

# What is E-Enterprise?



**IMPROVEMENT**
**PROCESS**

**JOINT GOVERNANCE & COMMUNITY**

**APPLICATION OF ADVANCED MONITORING AND INFORMATION TECHNOLOGIES**

E-Enterprise for the Environment is a new model for collaborative leadership among environmental co-regulators, engaging with all interested and affected parties, to achieve positive environmental, human health, and economic outcomes.

E-Enterprise Principles:

- Streamline and modernize programs before automating them.
- Use a business case approach to prioritize activities.
- Ensure that the program and system development explicitly takes into account the user's perspective.

IMPROVEMENT PROCESS

JOINT GOVERNANCE

APPLICATION OF ADVANCED MONITORING AND INFORMATION TECHNOLOGIES
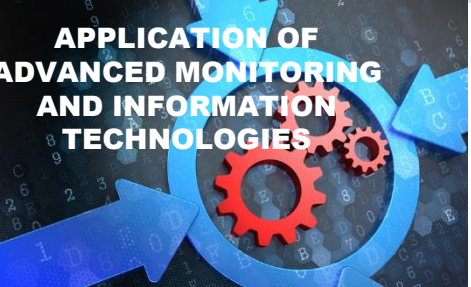
E-Enterprise Principles:
- Establish a seamless and secure network of services and systems to improve two-way business transactions between the regulated community and partners and among partners.
- Automate access to data to promote re-use of information and services by users and their application developers.
- Explore the integration of advanced monitoring, data collection, and analysis techniques into programs and explore the new management approaches they might enable.
- Lower cost of program and technical implementation by providing funding and shared infrastructure.

IMPROVEMENT
PROCESS

JOINT GOVERNANCE & COMMUNITY

APPLICATION OF ADVANCED MONITORING AND INFORMATION TECHNOLOGIES

Full realization of the E-Enterprise vision requires states, tribes and EPA to collectively recast the business model of environmental protection for the United States and, in doing so, redefine how regulators interact among themselves, with regulated entities, and with the public.
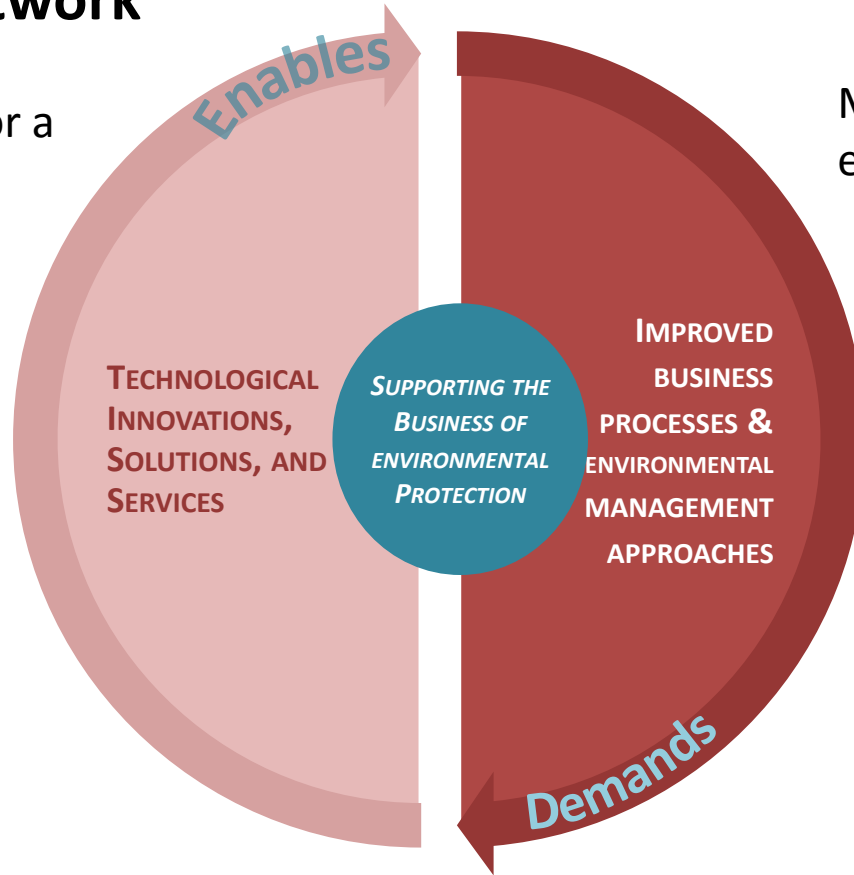
# How Does This All Work Together?

GRANT PROGRAM

SHARED SERVICES, SOFTWARE, AND TOOLS

JOINT GOVERNANCE & COMMUNITY

STANDARDS & PROTOCOLS

APPLICATION OF ADVANCED MONITORING AND INFORMATION TECHNOLOGIES

Improved Service and Agency Performance

Environmental and Public Health Outcomes

E-Enterprise Customers
- Regulated Community
- Environmental Agencies
- Public
- Third Party Developers

E-Enterprise Portal
- Personalized interface and information resource
- Smart Forms
- Cross Program Integrated Access

Partner Access and Transaction Systems
- State e-Gov Portals
- Partner Applications

Shared Technical and Programmatic Infrastructure

Programmatic Infrastructure
- Lean Training
- Economic Analysis
- IT Project Scoping

Technical Infrastructure
- Virtual Hosting
- Security Services
- User Registration and Identity Management Services

Open Data and Web Services
- Transport Services
- Analytic Services
- Business Process Management Services
- Data Services
- Lookup Services

Partner Projects
- Programmatic Development and/or Improvements
- Systems Development and/or Improvements

Modernizing and Streamlining Programs and Regulations
- Application of business process improvement methodologies
- Development of New Environmental Management Approaches

Portfolio of Adv. Monitoring Technologies and Solutions
- Infrared camera to monitor flares
- Remote telemetry of WQ data

NEW ENVIRONMENTAL MANAGEMENT APPROACHES
- Stronger Evidence-Based Management
- Improved Environmental Choices by Informed Public
- Automated Exceedance Detection/ Screening

Interfaces

Services and Infrastructure

Projects

Program Components

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# Examples are worth 1001 PPT slides

- CROMERR Shared Service
- Facility Data Integration
- Consolidated Air Emissions Reporting Project

# Example: Shared CROMERR Services

# ABSTRACT

Shared CROMERR Services (SCS) is a group of web services aimed at making the implementation of CROMERR easier. EPA is working to address some of the pain points that early adopters have faced.

# What is SCS?

- Shared CROMERR Services

- Group of web services

- Covers 4 things:
    - Registration and Account Management
    - Identity Proofing
    - Signature Device
    - Signature Ceremony and Copy of Record

# Background

## Shared CROMERR History

- 09/27/2012  - Shared CROMERR Charter  (18 States)
- 10/18/2012  - Component Guidance and Recommendations
- 11/15/2012  - Exchange Network/Grant Applicant Outreach (e.g. vote)
- 03/14/2013  - Application Status and Outreach Results
- 03/30/2013  - Prototype SCS  services and offer SCS Toolkit
- 2013 – 2015 – Integrated Project Teams for State Partners

Exchange Network Shared CROMERR Services Website
http://www.exchangenetwork.net/shared-cromerr-services-ipt/



Shared CROMERR Projects (19⁺)

**AEERS - Air Emissions Electronic Reporting System**

## Establish Proof of Identity

As a Responsible Official, you are required to establish proof of identity using LexisNexis Services prior to signing/submitting electronic reports through AEERS. Please verify the information below is correct before proceeding.

| | |
|---|---|
| User ID: | EX120@MAILINATOR.COM |
| First Name: | Katharine |
| Middle Initial: | |
| Last Name: | Sisk |

☐ I have reviewed the name presented above and I would like to proceed with LexisNexis identity proofing.

Proceed    Cancel    or click here for paper-based option

# Shared CROMERR Services

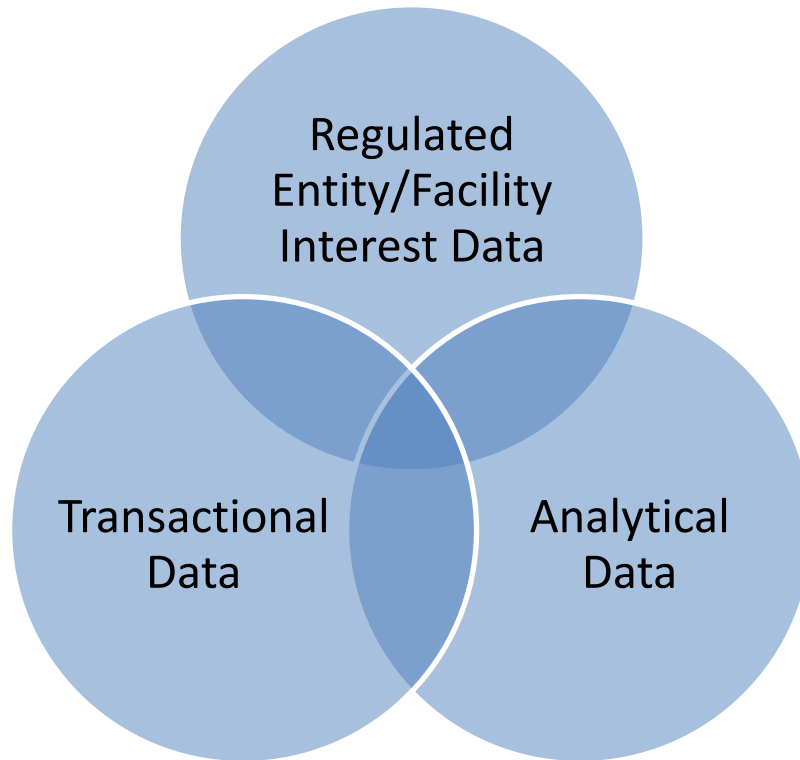- Why is it EN
- Why is it EE

# Example: Facility Data Integration

# ABSTRACT

Our ability to effectively protect human health and the environment often comes down to where regulated entities are – facilities, sites, and the activities occurring at those locations.  Many states still struggle with effectively integrating all of their facility information to get an accurate and complete picture of a facility's potential impact on the environment.  This integration is even more complicated when we try to share information among and between multiple states and EPA.  The Facility Data Integration IPT was created to figure out how we can collaboratively address this issue.  This presentation will introduce the purpose of the Facility Data Integration IPT and outline the IPT efforts to-date.
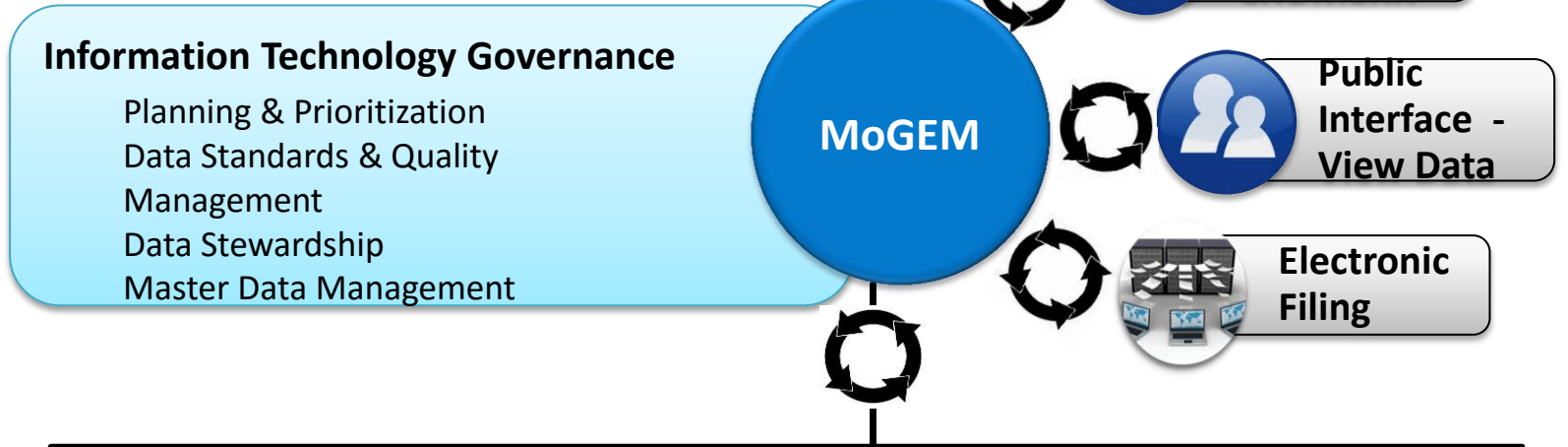
# Environmental/Regulatory Data



Regulated Entity/Facility Interest Data

Transactional Data

Analytical Data

# Are we speaking the same language?

# Missouri Gateway for Environmental Management

**Information Technology Governance**
- Planning & Prioritization
- Data Standards & Quality Management
- Data Stewardship
- Master Data Management

**MoGEM**

**Public Interface - CROMERR**

**Public Interface - View Data**

**Electronic Filing**

**Program Applications**

| Water Protection Data | Geological Survey Data | Solid Waste Management Data | Hazardous Waste Data | Air Pollution Control Data | Environmental Services Data | Land Reclamation Data |
|---|---|---|---|---|---|---|

**Shared Services**

| Fees & Billing | Permitting | Registration | Inspection | Enforcement |
|---|---|---|---|---|

MISSOURI DEPARTMENT OF NATURAL RESOURCES

EPA

# FRS and E-Enterprise – EPA's Approach

1.  Build a network of data stewards, provide them with data quality tools, and gather their complex business requirements

    FLA. 140 data stewards at EPA, states and municipalities

2.  Enter high quality data at the source

    FRS/CDX services for direct reporters

3.  Share core facility "profile" information with states

    Use case: reporter at a facility

    Facility IPT with States, new data model

4.  Harmonize core facility data elements

5.  Link facilities and contacts with their corporate parent organizations

# What Does FRS Need in the Facility "Profile?"

"Things" (objects of interest/facilities)

regulated & non-reg. business processes, including emission points, boilers, storage facilities, mobile sources, sampling points, etc. [Need permanent IDs]

•Where they are

point locations, polygons, on a complex site/campus. [Sites need permanent IDs]

•Why we care about them (Environmental Interests)

regulation, permit, Emergency response, etc.

•Attributes about them

equipment/process details, NAICS & SCC codes, additional attributes for determining regulatory requirements. Also, contacts [IDs] and parent companies [IDs]

•Associations between them

'Thing 2 is a component of Thing 1', 'Thing 3 flows to Thing 4', 'Company X owns Thing 1', 'Contact A is from Company X', and 'reports for Thing 1', etc.

# FACILITY DATA INTEGRATION IPT

**HOW DO WE DO THIS ACROSS THE ENTIRE ENVIRONMENTAL REGULATORY ENTERPRISE?**

# Facility Data Integration
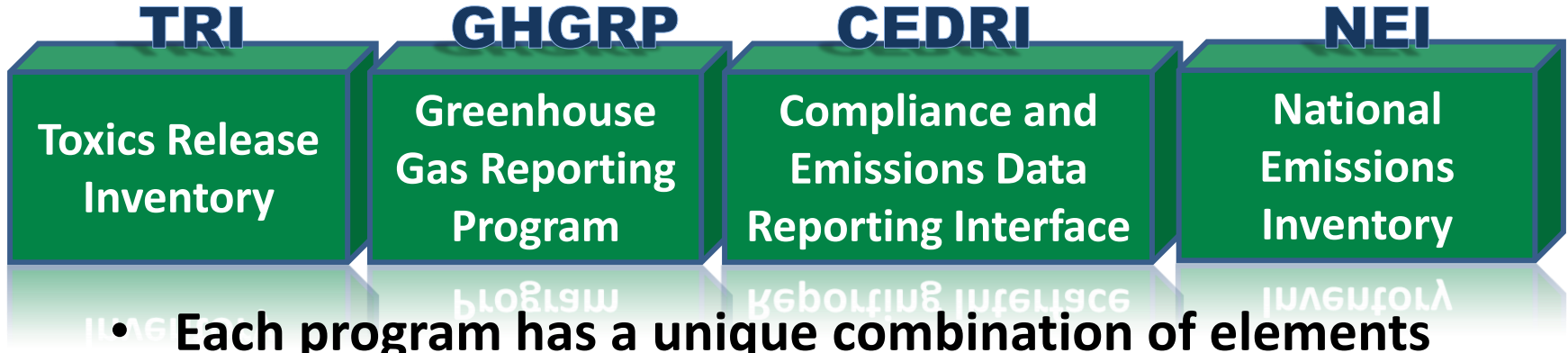
- Why is it EN
- Why is it EE

# Example: Consolidated Air Emissions Reporting

# ABSTRACT

The EPA and state, local, and tribal air agencies collect air emissions data for many separate programs. A diverse team used a Lean approach to propose a future state that streamlines collecting, sharing, and quality assuring emissions data. Emissions data will be provided faster with more accuracy and consistency across programs.
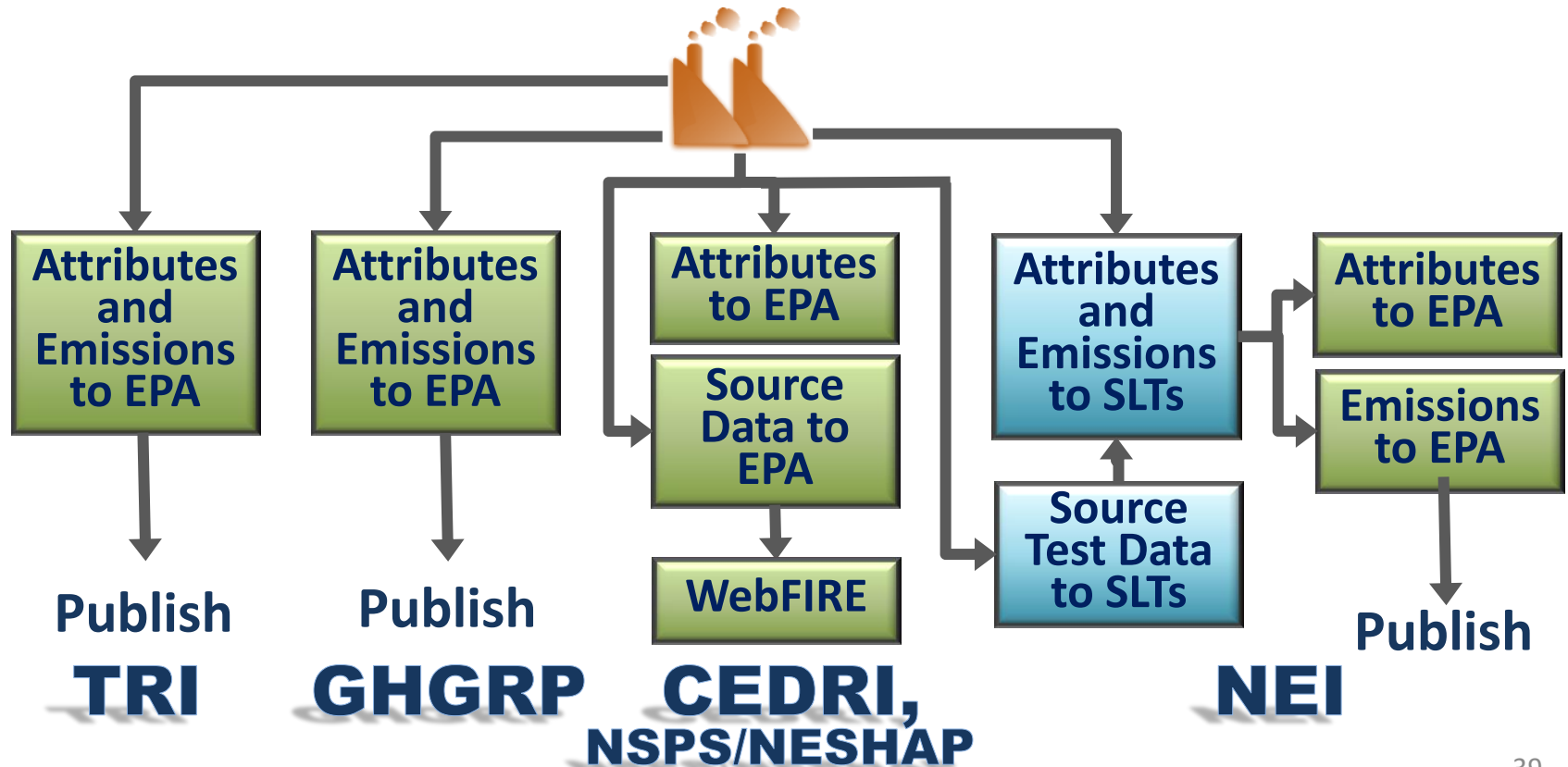
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# Focus on Point Sources

- **Four major air reporting programs**

**TRI**

Toxics Release Inventory

**GHGRP**

Greenhouse Gas Reporting Program

**CEDRI**

Compliance and Emissions Data Reporting Interface

**NEI**

National Emissions Inventory

- **Each program has a unique combination of elements**
- **Different reporting systems, facility definitions, data collected, & emissions methods**
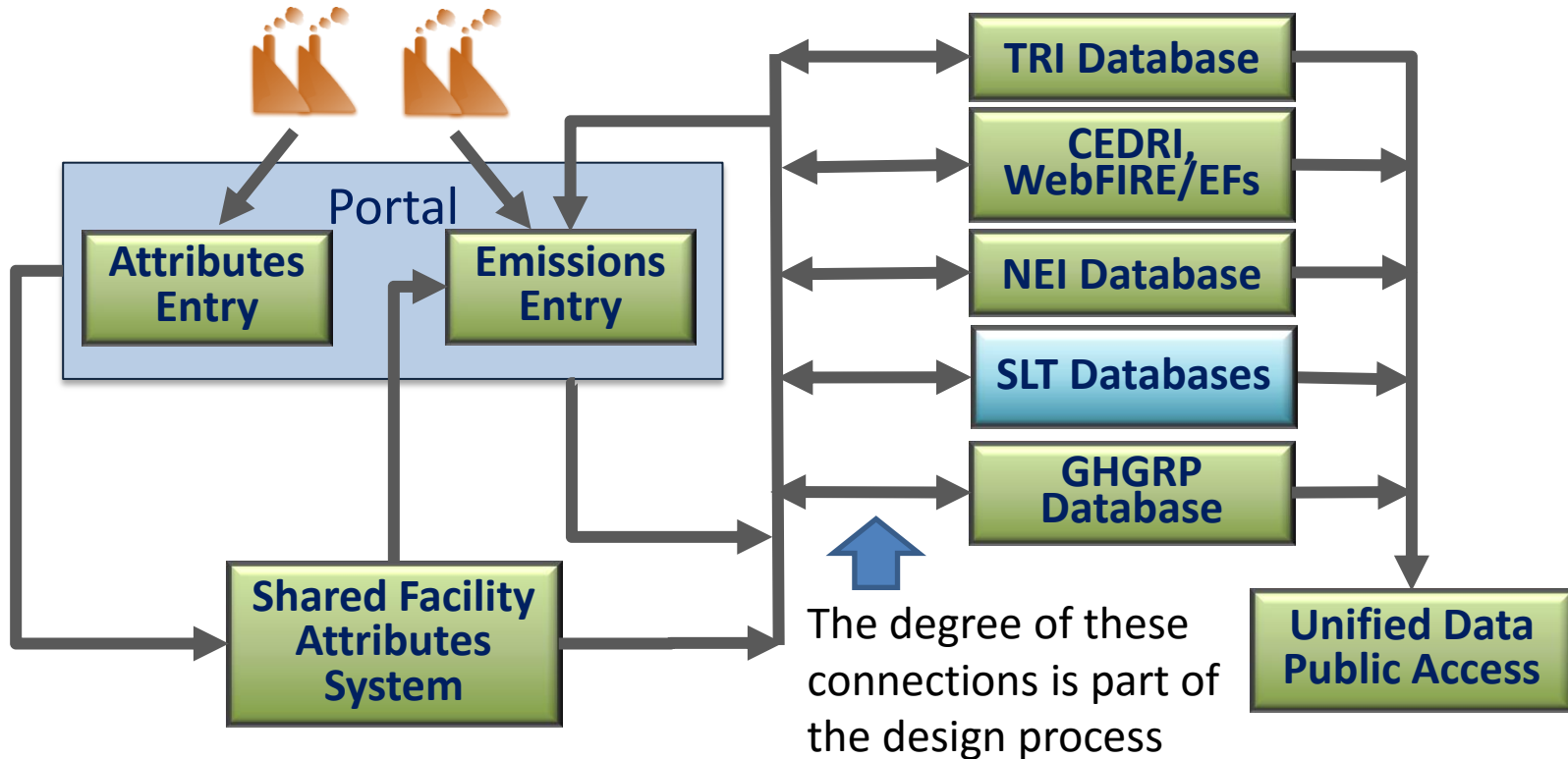- **NEI includes states, locals, and tribes (SLTs)**

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"As-Is" Case

Attributes and Emissions to EPA

Publish
**TRI**

Attributes and Emissions to EPA

Publish
**GHGRP**

Attributes to EPA

Source Data to EPA

WebFIRE

**CEDRI,**
**NSPS/NESHAP**

Attributes and Emissions to SLTs

Source Test Data to SLTs

**NEI**

Attributes to EPA

Emissions to EPA

Publish

# Lean Event Results

# Air Emissions – "To Be" Result

# Consolidated Emissions Reporting

- Why is it EN
- Why is it EE

# The End